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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,822	11/19/2003	Kazuyuki Matsumoto	1619.1026	3651

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EXAMINER
CASCHERA, ANTONIO A

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/715,822	MATSUMOTO ET AL.
	Examiner	Art Unit	
	Antonio A. Caschera	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _10 May 2005_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-3,5-7,9-11 and 13-18_ is/are pending in the application.

    4a) Of the above claim(s) _2, 6 and 10_ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1,3,5,7,9,11 and 13-18_ is/are rejected.

7) ☒ Claim(s) _4,8 and 12_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _19 November 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1, 3, 5, 7, 9, 11 and 13-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Mukoyama et al. (U.S. Patent 6,831,659 B1) in view of Palm (U.S. Patent

5,742,291).

In reference to claims 1, 13 and 16, Mukoyama et al. discloses an image display device

and method for displaying three-dimensional images to represent natural images (see column 6,

lines 60-64). Mukoyama et al. discloses an embodiment of the invention where highly realistic

trees are drawn onto a display (see column 14, lines 1-11 and Figure 20). Mukoyama et al.

discloses establishing the directional view in which "P" elements, representing the leaf clusters

of a tree, face (see column 14, lines 19-28, 38-48 and Figure 15). Mukoyama et al. discloses

setting the orientation of each display element using X,Y,Z coordinates (see column 15, lines 3-

10). Note, since Mukoyama et al. discloses using X,Y,Z coordinates in orienting each display

element, the office interprets that Mukoyama et al. inherently sets up three axes that are

orthogonal to one another in a three dimensional space. Mukoyama et al. discloses determining

the square shape of each P element, defined by four apexes, which are later texture mapped (see

columns 14-15, lines 66-3, column 15, lines 15-16). Note, the office interprets these four apexes

to form the "virtual surface" of Applicant's claims, using the X, Y, Z axes. Mukoyama et al.

discloses configuring the texture mapping of each display element using weighting coefficients

for each of the apexes (see column 15, lines 27-29 and 33-37). Note, since these weighting

coefficients affect the drawing of the texture map, the office interprets the number of weighting

coefficients, one supplied for each apex whereby the number of apexes may vary per display

element (see column 15, lines 2-3), functionally equivalent to the number of drawing iterations

of applicant's claims as for each weighting coefficient of Mukoyama et al., processing must be

performed thereupon. Mukoyama et al. also discloses drawing each display element with a

texture mapped thereto on the display using the apexes and weighting coefficients previously

calculated (see column 16, lines 6-28, 54-55 and "PT" of Figure 20). Mukoyama et al. discloses

drawing a wireframe of the tree using the display elements as divisions of each texture mapped

to each display element (see column 16, lines 46-53 and Figures 14 and 19). Mukoyama et al.

does not explicitly disclose moving the wireframe by dragging the wireframe however Palm

does. Palm discloses a method of creating and editing wireframes wherein the vertices of the

wireframe can be selected and moved from one location to another by dragging, be deleted from

the wireframe or new vertices added to the wireframe (see column 2, lines 55-57, column 3, lines

10-17 and Figures 9-11). It would have been obvious to one of ordinary skill in the art at the

time the invention was made to implement the realistic texture mapping techniques of

Mukoyama et al. with the wireframe manipulation techniques of Palm in order to create more

realistic renditions of 3-D models featuring life-like surface renderings faster and easier (see

column 2, lines 36-52 of Palm). Note, the office interprets that using the techniques of

Mukoyama et al. and Palm together would inherently change apex value coordinates in

Mukoyama as wireframe vertices are dragged and moved because apex values would move with

the wireframe (see Figure 19). Further note, in reference to claim 16, Mukoyama et al. and Palm

also disclose computer readable instructions for performing the above disclosed methods (see

column 5, lines 15-26 and column 14, lines 7-11 of Mukoyama et al. and column 3, line 10-11 of

Palm). (further see *Response to Arguments* below).

In reference to claims 3, 7 and 11, Mukoyama et al. and Palm disclose all of the claim

limitations as applied to claims 1, 5 and 9 respectively above. Mukoyama et al. discloses setting

the orientation of each display element using X,Y,Z coordinates (see column 15, lines 3-10).

Further, in reference to Figure 16 of Mukoyama et al., the drawing points, apexes VX3 and VX4

for example, define a side most parallel with the Y axis while apexes VX3 and VX1, define a

side most parallel with the z axis and therefore the office interprets Mukoyama et al. to

inherently disclose determining these points based upon determining a side most parallel with the

three axes.

In reference to claims 5, 14 and 17, Mukoyama et al. discloses an image display device

and method for displaying three-dimensional images to represent natural images (see column 6,

lines 60-64). Mukoyama et al. discloses an embodiment of the invention where highly realistic

trees are drawn onto a display (see column 14, lines 1-11 and Figure 20). Mukoyama et al.

discloses establishing the directional view in which "P" elements, representing the leaf clusters

of a tree, face (see column 14, lines 19-28, 38-48 and Figure 15). Mukoyama et al. discloses

determining the square shape of each P element, defined by four apexes, which are later texture

mapped (see columns 14-15, lines 66-3, column 15, lines 15-16). Mukoyama et al. discloses

configuring the texture mapping of each display element using weighting coefficients for each of

the apexes (see column 15, lines 27-29 and 33-37). Note, since these weighting coefficients

affect the drawing of the texture map, the office interprets the number of weighting coefficients,

one supplied for each apex whereby the number of apexes may vary per display element (see

column 15, lines 2-3), functionally equivalent to the number of drawing iterations of applicant's

claims as for each weighting coefficient of Mukoyama et al., processing must be performed

thereupon. Mukoyama et al. also discloses drawing each display element with a texture mapped

thereto on the display using the apexes and weighting coefficients previously calculated (see

column 16, lines 6-28, 54-55 and "PT" of Figure 20). Mukoyama et al. discloses drawing a

wireframe of the tree using the display elements as divisions of each texture mapped to each

display element (see column 16, lines 46-53 and Figures 14 and 19). Mukoyama et al. does not

explicitly disclose moving the wireframe by dragging the wireframe and changing the number of

lines in the wireframe however Palm does. Palm discloses a method of creating and editing

wireframes wherein the vertices of the wireframe can be selected and moved from one location

to another by dragging, be deleted from the wireframe or new vertices added to the wireframe

(see column 2, lines 55-57, column 3, lines 10-17 and Figures 9-11). Note, the office interprets

that since Palm discloses adding and deleting vertices in the wireframe, Palm inherently

discloses changing the number of lines and thus changing the number of drawing iterations as

adding vertices creates additional points where additional lines must connect to therefore

requiring additional processing (see Figures 10 and 11 of Palm). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to implement the realistic

texture mapping techniques of Mukoyama et al. with the wireframe manipulation techniques of

Palm in order to create more realistic renditions of 3-D models featuring life-like surface

renderings faster ánd easier (see column 2, lines 36-52 of Palm). Note, the office interprets that

using the techniques of Mukoyama et al. and Palm together would inherently change apex value

coordinates in Mukoyama as wireframe vertices are dragged and moved because apex values

would move with the wireframe (see Figure 19). Further note, in reference to claim 17,

Mukoyama et al. and Palm also disclose computer readable instructions for performing the above

disclosed methods (see column 5; lines 15-26 and column 14, lines 7-11 of Mukoyama et al. and

column 3, line 10-11 of Palm). (further see *Response to Arguments* below).

In reference to claims 9, 15 and 18, clams 9, 15 and 18 are equivalent in scope to the

combination of claims 1, 13, 16 and 5, 14 and 17 respectively above and are therefore rejected

under equivalent rationale.

Response to Arguments

3.   The cancellation of claims 2, 6 and 10 is noted.

4.   Applicant's arguments filed 05/10/05 have been fully considered but they are not

persuasive.

In reference to claims 1, 5, 9 and 13-18, Applicant argues that neither Mukoyama or Palm

teach, "setting three axes that will be orthogonal to one another using a plurality of points of the

three dimensional image in order to establish a three dimensional space on the three-dimensional

image," (see page 11 of Applicant's Remarks). The office disagrees as Mukoyama et al.
discloses setting the orientation of each display element using X,Y,Z coordinates (see column 15,
lines 3-10). Therefore, Mukoyama et al. must inherently disclose setting three axes orthogonal
to one another establishing a three dimensional space. Such space further defined by the X, Y, Z
coordinates of the four apexes of the element face. Therefore, the office maintains its previous
rejection based upon Mukoyama et al.

Even further, Applicant argues that neither Mukoyama or Palm disclose, "wherein in a
case a movement of the wireframe is requested by dragging the wireframe on the display, a value
of the drawing start point is changed in accordance with the amount of movement of the
dragging the wireframe," (see pages 11-12 of Applicant's arguments). The office disagrees as
Palm is combined with Mukoyama to show the feature of moving by dragging of a wireframe
(see above rejections). Specifically, Palm discloses a method of creating and editing wireframes
wherein the vertices of the wireframe can be selected and moved from one location to another by
dragging, be deleted from the wireframe or new vertices added to the wireframe (see column 2,
lines 55-57, column 3, lines 10-17 and Figures 9-11). The combination of Mukoyama and Palm
surely shows such functionality of dragging the wireframes as the techniques of Mukoyama et al.
and Palm inherently change apex value coordinates as the wireframe vertices are dragged and
moved because apex values would move with the wireframe (see Figure 19 of Mukoyama et al.).
Therefore, the office maintains its rejection based upon Mukoyama and Palm in view of the
dragging limitation recited by application's claims.

Allowable Subject Matter

5.   Claims 4, 8 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In reference to claims 4, 8 and 12, the prior art of record (Mukoyama et al. (U.S. Patent 6,831,659 B1) and Palm (U.S. Patent 5,742,291)), does not explicitly disclose determining the number of drawing iterations by determining a length of the side of the face and using this length with a size of texture in combination with the further limitations of claims 4, 8 and 12 respectively.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781.

The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30

AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Matthew Bella, can be reached at (571) 272-7778.
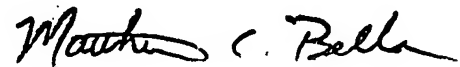
Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose telephone

number is (703) 306-0377.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

aac

7/18/05